

# Title: Resume on Phobia treatment using virtual reality techniques.

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## Resume

This work is a summary of articles and reviews, some of them have been read on a detail manner and other just take the abstract and conclusion into consideration. they highlight the promising role of Virtual Reality (VR) and Virtual Reality Exposure Therapy (VRET) in the treatment of anxiety and psychiatric disorders. They emphasize the effectiveness of VRET in addressing specific conditions like fear of flying (FoF) and claustrophobia, while also discussing the broader applications of VR in managing various psychiatric disorders such as phobias, PTSD, dementia, and schizophrenia. However, they acknowledge challenges related to technology and user experience, indicating the need for ongoing research and development in this innovative field of psychiatric therapy.

## Introduction

Phobia is a mental disorder characterized by an intense fear of specific objects, animals, places, or situations. Cognitive Behavioral Therapy (CBT) tools have proven effective in addressing phobias and making a valuable impact on patients. To enhance the cost-effectiveness and efficacy of this approach, researchers have turned to Virtual Reality (VR) applications.

VR exposure therapy is an adaptation of CBT exposure therapy that may offer improved effectiveness compared to traditional methods or, at the very least, serve as a valuable complement. Additionally, given that CBT is an evidence-based therapy [3], aligning VR interventions with CBT principles can enhance treatment outcomes. VR technology can also help reduce costs and eliminate the need for expensive in vivo experiments.

## State of art

The article A Literature Overview of Virtual Reality (VR) in the Treatment of Psychiatric Disorders: Recent Advances and Limitations, provided a comprehensive review of (VR) applications in the treatment of various mental disorders, highlighting its broader utility. [4]

The article Efficacy of virtual reality-based exposure therapy for the treatment of fear of flying: a systematic review, it conducted a systematic analysis of Virtual Reality Exposure Therapy (VRET) for fear of flying (FoF). The results revealed that VRET is at least as effective as established treatments such as Cognitive-Behavioral Therapy (CBT). The study also suggested that enhancing

VRET with synchronized motion feedback and sensory cues could further strengthen its effectiveness, pending additional research validation. [5]

The article *Experiences of Patients and Therapists Testing a Virtual Reality Exposure App for Symptoms of Claustrophobia: Mixed Methods Study*, explored a non-randomized feasibility study involving a Virtual Reality Exposure (VRE) app for claustrophobia. The results indicated that the VRE app was both feasible and well-received by both patients and experts. [2]

## Proposition

In this article [2], the authors found a mean score of 4.13 out of 6 (SD 0.83) when participants were asked the question, "I think such interventions are better conducted in the presence of a therapist." I propose including the therapist within the virtual environment simultaneously with the patient, either through another VR headset or by controlling virtual players (such as virtual humans, animals, or objects) in the scenes, as a first experiment. We can then compare this setup to self-assessment experiments conducted at home to determine which approach is more effective.

Furthermore, to enhance the immersive experience, we could consider integrating AI models with sensors for monitoring the patient's heart rate, hand movements, and EEG headset. These sensors could detect the patient's emotions in real-time and make adjustments to the session as needed, at the accord of expert.

## Conclusion

Patients with various psychiatric diagnoses share common characteristics, and modern VR systems offer a controlled and immersive space for addressing their challenges. However, technical issues like motion sickness and user concerns such as addiction need to be addressed

a VRE app should include varying intensity levels and options for human interaction. Future research should explore sensory stimuli in virtual environments and consider clear instructions for therapists to personalize VR experiences. As air travel becomes more common, VR exposure therapy (VRET) is expected to gain significance in treating conditions like aviophobia, necessitating further research and meta-analyses for a comprehensive understanding of VRET's effectiveness and ethical implementation in clinical practice.

## References

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